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ABSTRACT

This study examines whether college supervisors who analyze their verbal behavior in supervisory conferences by means of the Blumberg system exhibit a change in proportions of direct and indirect verbal behavior when compared with college supervisors who do not use the Blumberg system to analyze their supervisory conferences. Sixteen volunteer college supervisors participated in this study during a single semester. Volunteers were randomly assigned to a training or control group. Supervisors in the training group were offered the opportunity to attend four 2-hour training sessions, one each week. On successful completion of the proficiency examination, roughly mid-semester, supervisors in the training group recorded and analyzed one conference a week for 6 weeks. Results of the study indicated no statistically significant differences in selected verbal behavior between supervisors using the Blumberg system to analyze their conferences and supervisors who did not use this system for conference analysis. This study explains the Blumberg system used in the conference analyses. A 6-item bibliography, interaction system, matrix and tables are included. (MJM)

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Differences in the Verbal Behavior of College Supervisors Using The Blumberg System for Analyzing Supervisory Conferences and College Supervisors Using No Systematic Analysis

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Purpose of the Study

The purpose of this study was to examine whether college supervisors who analyze their verbal behavior in supervisory conferences by means of the Blumberg system exhibit a change in the proportions of indirect and direct verbal behaviors when compared with college supervisors who do not analyze their supervisory conferences by means of the Blumberg system. The subproblems investigated were:

1. Are college supervisors willing to learn how to analyze the verbal behavior in their supervisory conferences?

2. Can college supervisors be instructed in the use of the Blumberg system to a reasonable level of inter-observer agreement within a reasonable period of time?

3. Having learned to analyze the verbal behavior of participants in supervisory conferences by means of the Blumberg system, will college supervisors then apply this knowledge to self-analysis?

Although most verbal category systems for analyzing supervisory conferences were designed specifically for research purposes, there do exist systems for training as well as research. One such category

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system, developed by Arthur Blumberg, was designed to analyze the interaction between supervisors and teachers in school settings, and, Blumberg maintained, it is applicable to the dyadic conference either as a research instrument or as a training instrument. According to Blumberg:

> An interaction system that is concerned with the supervisor and teacher, then, should offer its users, minimally, information about
>
> 1. How change efforts are made (i.e., how help is offered).
>
> 2. The relative supportiveness or defensiveness of communication.
>
> It should also be able to reflect
>
> 1. How the supervisor's behavior affects the teacher.
>
> 2. How the supervisor reacts to the behavior of the teacher.[1]

The Blumberg system (see Appendix) is a derivative of the Flanders system and as such incorporates the notion of direct and indirect supervisory verbal behaviors.

A number of studies have been reported in which an attempt was made to establish correlations between teacher verbal behaviors described by Flanders as "indirect" and "direct" and student achievement. Examination of a number of such studies seems to indicate that there exist weak but consistent positive correlations between teacher indirectness and pupil achievement, and weak but consistent negative correlations between teacher directness and pupil achievement.

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[1]Arthur Blumberg, "A System for Analyzing Supervisor-Teacher Interaction," Mirrors for Behavior, eds. Anita Simon and E. Boyer, VIII (Phila: Research for Better Schools, Inc., 1970), p. 34-1-2.

If the self-analysis of verbal teaching behavior by means of systems of interaction analysis leads to more indirect teaching behavior, and if indirect teaching behavior is associated with greater pupil achievement, then the self-analysis of verbal teaching behavior by means of interaction analysis systems should lead to greater achievement.

In terms of the above syllogism, this study concerned itself with establishing the validity of the major premise as applied to the verbal teaching behavior of college supervisors during supervisory conferences.

Limitations of the Study

It was not the intention of this study to arrive at generalizations about the nature of the interaction which takes place between college supervisors and their student teachers during supervisory conferences, nor was it intended to test or predict relationships between supervisory verbal behavior and student teacher performance. Father, the problem as described above addressed itself to exploring the feasibility of a means for inducing changes in the verbal behavior of college supervisors.

This study was limited to sixteen college supervisors within a single institution working with student teachers on the secondary level. The study was conducted during the course of a single semester, and all of the supervisors who participated were volunteers.

The Variables

The independent variable was the use of the Blumberg system of analyzing the verbal interaction in supervisory conferences.

The dependent variables were the proportions of use of the following six clusters of categories:

Variable	Corresponding Categories	
1	Category 1	Support-Inducing Communication
	Category 2	Praise and Encouragement
2	Category 3	Accepts and Uses Student Teacher's Ideas
3	Category 4	Asks for Information
	Category 5	Gives Information
4	Category 6	Asks for Opinions
	Category 7	Asks for Suggestions
5	Category 8	Gives Opinions
	Category 9	Gives Suggestions
6	Category 10	Criticims

Following Flanders' model, and for purposes of this study, the indirect supervisory behaviors are taken to be those represented by Categories 1, 2, 3, 6, and 7 and direct supervisory verbal behaviors are taken to be those in Categories 8, 9, and 10, thus eliminating the effects of Categories 4 (Asks for Information) and 5 (Gives Information) which tend to have neutral affect.

In terms of the Areas on the Blumberg matrix (see Appendix) behaviors falling into Areas A, B, and D are taken to be indirect, and behaviors in Areas E and F are taken to be direct for purposes of this study. Area C, then, is considered to be transitional, and is not taken as contributing to either indirect or direct behaviors.

The correspondences among indirect/direct behaviors, the dependent variables, the Blumberg Areas and the Blumberg Categories 1 through 10, are illustrated in Table 1.

Table 1

Direct/ Indirect	Dependent Variables	Blumberg Areas	Blumberg Categories
Indirect Supervisory Behaviors	1	A	Category 1 Category 2
	2	B	Category 3 Category 6
	4	D	Category 7
Transitional Supervisory Behaviors	3	C	Category 4 Category 5
Direct Supervisory Behaviors	5	E	Category 8 Category 9
	6	F	Category 10

Characteristics of the Population

Of the sixteen volunteer supervisors, fourteen were full-time members of the university faculty, and two were part-time instructors. Of the fourteen full-time faculty members, three held the position of instructor, six were assistant professors, three were associate professors, and two held the rank of full professor. Of these two, one was also Associate Dean of the School of Education.

None of the sixteen volunteers had had previous academic training in the supervision of student teachers, and none had ever tape-recorded his supervisory conferences.

Three of the volunteers had had considerable experience in working with interaction analysis. All three taught courses within the Secondary Education Department in the analysis of classroom verbal behavior either on the graduate or undergraduate level, and all three had at some time tape-recorded and analyzed their classroom verbal behavior using the Flanders or Amidon-Hunter category systems.

With respect to previous experience as a college supervisor of secondary student teachers, four had had no previous experience, six had had up to five years of experience, and the remaining six volunteers had from six to thirteen years of experience.

These sixteen volunteers were divided on a random basis into two groups: training and control.

Table 2

Characteristics of the Population

Training Group				
Supervisor	Position	Number of Years Previous Experience as College Supervisor	Certification Area	Previous Experience with Interaction Analysis
A	Assistant Professor	2 years	Social Studies	Considerable
B	Assistant Professor	8 years	Foreign Languages	Some
C	Assistant Professor	5 years	Speech Arts	None
D	Instructor	1 year	Art	None
E	Professor Associate Dean	10 years	Social Studies	Some
F	Assistant Professor	1 year	Business Education	Some
G	Instructor (part-time)	3 years	Business Education	None
H	Instructor (part-time)	None	English	None

Table 3

Characteristics of the Population

Supervisor	Position	Control Group Number of Years Previous Experience as College Supervisor	Certification Area	Previous Experience with Interaction Analysis
J	Professor	13 years	English	Considerable
K	Associate Professor	8 years	Foreign Language	None
L	Associate Professor	6 years	Science	Some
M	Instructor	None	Art	None
N	Assistant Professor	None	Social Studies	Some
O	Assistant Professor	7 years	Music	None
P	Instructor	5 years	English	Considerable
Q	Assistant Professor	None	Speech	None

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Prior to the beginning of the workshop sessions, all sixteen volunteer college supervisors were requested to submit a tape-recording of one conference with a student teacher during the first week of supervisory observations (approximately during the third week of the semester), so as to have material available for analysis in the workshops. On completion of the recordings, the volunteers were randomly assigned to either the training group or the control group.

Supervisors in the training group were offered the opportunity of attending approximately four two-hour training sessions, one session each week. However, not all supervisors were expected to attend all four training sessions. Training was intended to end when supervisors reached a minimum proficiency level of (1) coding from a tape containing examples of all categories in the system with an inter-observer agreement of .70 with the investigator, and (2) reading and interpreting the meaning of cell loadings on a prepared matrix. Since some supervisors were already familiar with the Flanders system or similar systems, it was expected that these supervisors would attend fewer sessions. A summary of the number of training sessions attended and level of agreement on the proficiency tape appears in Table 4.

On successful completion of the proficiency examination, roughly mid-semester, it was suggested to the supervisors in the training group that they tape-record and self-analyze one conference each week for the remaining six weeks of the semester. These analyses were to be done solely by the supervisor, although the investigator was available for additional help if needed.

During the final two weeks of the semester all sixteen supervisors were asked to tape-record a second conference with the same student teacher who had participated in the first conference. This was done in an attempt to reduce differences that might appear if different personalities were involved in the two conferences.

Table 4

Supervisor	Training Sessions Attended	Inter-Observer Agreement	Conferences Coded After Training
A	1	0.802	1
B	4	0.724	3
C	5	0.759	1
D	3	0.895	5
E	4	0.743	1
F	0	0.696	1
G	4	0.703	6
H	4	0.747	5

Analysis of the Data

Supervisors in both training and control groups submitted a first tape-recording of a supervisory conference held early in the Spring 1971 semester and a second tape-recording of a supervisory conference held with the same student teacher during the final two weeks of the semester. Hence, a total of thirty-two tape-recordings were submitted to the investigator. The sixteen early tapes were designated the pretest conferences and the sixteen final tapes were designated the posttest conferences.

All thirty-two tape-recorded conferences were coded at the conclusion of the semester during a three week interval by the investigator and a second observer familiar with the Blumberg system and who had not participated in the study. The inter-observer agreement of 0.927 between the investigator and second observer was determined immediately prior to the coding of the thirty-two conferences using the 11-minute role-played proficiency tape.

The conferences were all coded during a three-week interval in order to maintain consistency of coding. Moreover, the thirty-two conferences were coded in random order to avoid any possible "mind set" on the part of the investigator who might have anticipated changes in verbal behavior in the predicted directions.

At the conclusion of coding all conferences, the codings were compiled into four composite matrices: training group pretest, training group posttest, control group pretest, and control group posttest.

The first analysis of the data was done by inspection of the composite matrices. While some differences are evident, it appeared that despite the random assignment to training or control groups, initial differences in supervisory verbal behaviors might account for differences in the final behaviors. It was decided, therefore, to do an analysis of covariance so that group means could be adjusted for initial differences. (These results are reported in Table 5, on page 14).

Since the tape-recorded conferences were of different lengths, raw frequencies were changed to frequencies per hundred for purposes of analysis. For each of the six dependent variables, the frequencies per hundred represent the column totals of the corresponding Blumberg categories.

The principal hypotheses to be investigated with respect to the purpose of the study were the following:

H_1: Over one semester supervisors in the training group will exhibit greater proportions of verbal behavior classified by Blumberg as building and maintaining interpersonal relationships than will supervisors in the control group.

H_2: Over one semester supervisors in the training group will exhibit greater proportions of verbal behavior classified by Blumberg as utilization of student teachers' ideas than will supervisors in the control group.

H_3: Over one semester there will be no differences between the training and control groups in the proportion of verbal behavior classified by Blumberg as working on the informational data level.

H_4: Over one semester supervisors in the training group will exhibit greater proportions of verbal behavior classified by Blumberg as working on the opinion data level than will supervisors in the control group.

H_5: Over one semester supervisors in the training group will exhibit a decrease in the proportions of verbal behavior classified by Blumberg as methodology and/or control when compared with supervisors in the control group.

H_6: Over one semester supervisors in the training group will exhibit a decrease in the proportions of verbal behaviors classified by Blumberg as controlling the student teacher's behavior when compared with supervisors in the control group.

Table 5 shows the results of an analysis of covariance on the dependent variables described in the above hypotheses.

The reader will note that as a result of the analysis of covariance, there were no statistically significant differences at the .05 level between the training and control groups with respect to the six dependent variables. While it cannot be said with statistical confidence that these results were not due to a random process, nevertheless there are certain apparent directional tendencies evident in the percent changes which warrant at least some attention.

As can be seen from Table 5, only Hypothesis 3 was accepted. It stated that there would be no significant differences between the training group and the control group in the proportions of verbal behavior classified as working on the informational data levels (Category 4, Asks for Information; and Category 5, Gives Information).

Table 5

Analysis of Covariance of Training and Control Groups on Selected Verbal Behaviors

Verbal Behavior	Source of Variation	df	Sums of Squares	Mean Squares	F *
Support-Inducing Communication (Categories 1 and 2)	Between	1	8.465	8.465	0.40
	Within	13	273.427	21.032	
Uses Student Teacher's Ideas (Category 3)	Between	1	3.192	3.192	1.14
	Within	13	36.353	2.796	
Informational Data Level (Categories 4 and 5)	Between	1	0.117	0.117	0.00
	Within	13	812.516	62.501	
Opinion Data Level (Categories 6 and 7)	Between	1	154.813	154.813	0.62
	Within	13	3,243.905	249.531	
Methodology and/or Control (Categories 8 and 9)	Between	1	352.137	352.137	2.99
	Within	13	1,527.807	117.523	
Controlling Student Teacher's Behavior (Category 10)	Between	1	20.369	20.369	0.78
	Within	13	339.202	26.092	

*For $p < .05$, with df 1,13 $F = 4.67$

With respect to the first hypothesis, the anticipated change was an increased use of verbal behavior classif by Blumberg as building and maintaining inter-personal relationships by supervisors in the training group. Not only was there no significant difference between the training and control groups, but the use of Categories 1 (Support-Inducing Communication) and 2 (Praise) by both groups decreased. In terms of percent use, (See Tables 6 and 7) the decrease for the control group was 5.76%, while the decrease for the training group was 0.27%. As can be seen from Tables 6 and 7, four supervisors in the training group increased their use of Categories 1 (Support-Inducing Communication) and 2 (Praise) while four decreased. In the control group seven supervisors decreased and one supervisor increased in the use of Categories 1 and 2.

Hypothesis 2 was not accepted on the basis of the results of the analysis of covariance. It stated that supervisors in the training group would exhibit a significant increase in their use of Category 3 (Accepts and Uses Student Teacher's Ideas). From Tables 6 and 7 it can be seen that seven of the supervisors in the training group increased their use of verbal behavior classified as using student teacher's ideas, while one decreased. In the control group. four supervisors increased their use of Category 3 (Accepts or Uses Student Teacher's Ideas), two showed no change and two decreased.

Hypothesis 3, which stated that there would be no significant differences between supervisors in the training and control groups in the proportions of Categories 4 (Asks for Information) and 5 (Gives Information), was accepted.

Table 6

Summary of Direction and Percent of Change in the Use of Specified Verbal Behaviors by Supervisors in the Training Group

Supervisor	Categories 1 & 2	Category 3	Categories 4 & 5	Categories 6 & 7	Categories 8 & 9	Category 10
A	+4.98	+1.25	-3.66	-0.18	+3.66	-2.27
B	-10.58	-0.79	-0.37	+0.86	-4.29	+17.41
C	-3.75	+1.37	-0.70	-5.47	-1.07	-0.19
D	-5.11	+2.61	+3.97	-4.67	-3.31	-3.12
E	+3.52	+1.55	-8.44	-0.51	-9.68	0.00
F	+4.77	+1.05	+14.10	+0.97	-2.42	-2.55
G	+1.82	+1.21	-3.00	+5.30	-18.48	-2.27
H	-0.73	+1.21	-4.48	+1.11	-7.70	-0.44
Average Change	-0.27	+0.69	-2.75	-0.39	-7.46	+2.42

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Table 7

Summary of Direction and Percent of Changes in the Use of Specified Verbal Behavior by Supervisors in the Control Group

Supervisor	Categories 1 & 2	Category 3	Categories 4 & 5	Categories 6 & 7	Categories 8 & 9	Category 10
J	-1.72	+1.02	+1.86	-4.41	+2.12	-5.15
K	-3.00	-1.24	+0.33	+0.58	-0.84	+0.96
L	-10.84	0.00	+1.52	-0.47	+7.64	-0.18
M	-7.13	0.00	-6.73	+10.23	-20.56	+0.90
N	-9.24	-1.63	+9.29	-2.21	-2.88	+2.20
O	-13.57	+4.65	-7.37	-1.17	+16.78	-0.29
P	-4.76	+0.28	-14.73	-3.25	+27.18	-2.23
Q	+8.72	+0.71	-0.41	-1.85	-15.70	-1.37
Average Change	-5.76	+0.03	-1.41	+0.19	+0.52	-0.36

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Hypothesis 4 was not accepted. It stated that supervisors in the training group would exhibit a significant increase in their use of Categories 6 (Asks for Opinions) and 7 (Asks for Suggestions). Again in terms of individual supervisors, four in the training group increased their use of Categories 6 and 7 while two supervisors in the control group exhibited a greater use of these categories.

Hypothesis 5 was not accepted. It stated that supervisors in the training group would exhibit a significant decrease in their use of Categories 8 (Gives Opinions) and 9 (Gives Suggestions). The hypothesized change was in the direction of decreased use by the supervisors in the training group. While the change was not significant, seven of the eight supervisors in the training group did show a decrease, while only four of the supervisors in the control group showed a decrease.

Similarly, Hypothesis 6 which predicted a significant decrease in the use of Category 10 (Criticism) by supervisors in the training group was not accepted. Six supervisors in the training group exhibited a decrease, one remained unchanged, and one exhibited an increase. In the control group, five supervisors showed a decrease while three increased their use of Category 10.

Discussion of the Results

Although the analysis of covariance revealed no significant differences in selected verbal behaviors between supervisors who used the Blumberg category system to analyze their verbal behavior in supervisory conferences and supervisors who did not use the Blumberg system to analyze their conferences, nevertheless there were some positive changes in the hypothesized directions by supervisors in the training group.

With respect to the first hypothesis, the anticipated change was an increased use of Category 1 (Support-Inducing Communication) and Category 2 (Praise). As was shown previously, both groups exhibited a decrease in the use of these categories. It may be the case that as semester progresses, college supervisors perceive less need for building and maintaining interpersonal relationships. However, the fact that supervisors in the control group exhibited a greater decrease (5.76%) than supervisors in the training group (0.27%) may indicate that use of the Blumberg system tends to offset the possible pattern of an overall decrease in the use of verbal supervisory behaviors categorized as building and maintaining interpersonal relationships.

While supervisors in both training and control groups exhibited a slight overall increase in the use of Category 3 (Accepts and Uses Student Teachers Ideas), there was, on the whole, extremely little evidence of supervisors making use of, clarifying or expanding upon the ideas expressed by their student teachers during supervisory

conferences. Given such limited use of Category 3 by all sixteen supervisors in the study, the increase exhibited by the seven supervisors in the training group represents a somewhat promising change. The ability to pick up and work with ideas expressed by others may well be a difficult skill to acquire, but it would seem that the supervisors in the training group identified this area as worth working toward.

It has been predicted that supervisors in the training group would exhibit an increased use of Category 6 (Asks for Opinions) and Category 7 (Asks for Suggestions). However, the supervisors in the training group showed a slight decrease (0.39%) while supervisors in the control group exhibited a slight increase (0.19%). While there was, in effect, no difference between the groups in terms of an increased use of this category, four of the supervisors in the training group exhibited an increase as compared with two supervisors in the control group.

Asking the student teacher to analyze or evaluate his teaching behavior (Category 6) or to generate alternative means of approaching a task (Category 7) would seem to be supervisory behaviors which more deeply engage the student teacher in problem-solving activities. On the other hand, when supervisors analyze or evaluate the student teacher's performance (Category 8) or provide alternative suggestions (Category 9), the problem-solving aspects of the conference is more in the hands of the supervisor rather than the student teacher. It is interesting to note that when the ratio of supervisory "asking" (Categories 6 and 7) to supervisory "telling" (Categories 8 and 9)

are compared, supervisors in the control group did approximately five times as much "telling" as "asking" on both pretest and post-test conferences, while supervisors in the training group exhibited a decrease from approximately three times as much "telling" on the pretest conferences to approximately twice as much "telling" on the posttest conferences. The change is perhaps small, but any move in the direction of putting the problem-solving into the hands of the learner may well be a useful one.

In terms of the predicted decrease in the use of Category 10 (Criticism), the supervisors in the training group exhibited an increase (2.42%) compared with a slight decrease (0.36%) by supervisors in the control group. However, the overall increase by supervisors in the training group may have been effected by the relatively large increase (17.41%) in the use of criticism by one supervisor (Supervisor B) in the training group. If the pretest and posttest conferences for Supervisor B were omitted from the composite matrices for the training group, the use of Category 10 (Criticism) by the remaining seven supervisors decreased by 1.02%. Neither group exhibited more than a slight change in use of Category 10, but there was relatively little use of the category by either group.

With respect to the subproblems of the study, sixteen of twenty-four supervisors volunteered to participate. Blumberg and Cusick pointed out that "as can be imagined, this is not the kind of data that is easily collected. Supervisors seem to be somewhat reluctant

to have their conferences recorded."[1] That two-thirds of the supervisory staff volunteered would seem to indicate some interest on the part of the supervisors in this study to explore their teaching behavior in supervisory conferences.

In addition, the training time required to achieve reasonable proficiency was not excessive. When considering the feasibility of procedures for the improvement of teaching behaviors in the supervisory conference by in-service college supervisors, the factor of time required for training cannot be considered lightly. Since all but two of the supervisors in this study were full-time faculty members, it was necessary to explore the effectiveness of a training procedure which would encroach as little as possible on the wide range of responsibilities of university faculty.

In terms of the relative frequency of use of the system after completion of training, the fact that four of the eight supervisors in the training group employed the system only once during the remaining six weeks of the semester is difficult to evaluate. It is not known, for example, what relationships exist between the frequency of such self-analysis and the quality or depth of the self-study of a single conference is as valuable to the supervisor as more rapid analysis of a number of conferences. Clearly, this is an aspect that requires considerable further investigation.

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[1] Arthur Blumberg and Philip Cusic k"Supervisor-Teacher Interaction: An Analysis of Verbal Behavior" (paper read at annual meeting of the American Educational Research Association, Minneapolis, Minn., 1970), p. 7.

In considering the study as a whole, one possible reason for the failure to achieve significant differences was the limited period of time, approximately six weeks, between the conclusion of training and the final supervisory conference. Although some of the supervisors in the training group had little or no previous experience as college supervisors, all had had from seven to fifteen years classroom teaching experience. Most of the earlier studies on the effects of training in interaction analysis on the verbal behavior of teachers were conducted with student teachers or intern teachers, and it seems reasonable to assume that the population in those studies had not yet completely developed their verbal teaching styles. It seems likely that the longer the teaching experience, the more difficult it becomes to change verbal teaching behavior. If this is true, then it may well take considerably longer than one semester for college supervisors to exhibit changes in their verbal behaviors. This position seems practicularly reasonable in light of the fact that more changes were made by those supervisors in the training group who had had one year's experience or less as a college supervisor than the supervisors with from three to eight years' experience.

Another possible explanation for the lack of significant changes might be that college supervisors, unlike student teachers or beginning teachers, do not see that indirect verbal behaviors are necessarily more likely to achieve the goals of the supervisory conference. This lack of conviction with respect to the value of the indirect/direct dimensions of the Blumberg system may account

for the infrequent use of the system by four of the supervisors after completion of training. It may be the case that college supervisors are more concerned with cognitive as opposed to affective aspects of the supervisory conference, and that a system like Weller's would be more appropriate.

Summary

Given the acknowledged importance of the supervisory conference in teacher education programs, there has been to date little effort to modify the teaching behavior of college supervisors in supervisory conferences.

This study explored the feasibility of inducing changes in the verbal behavior of college supervisors through self-analysis of their conferences by means of the Blumberg Supervisor-Teacher Interaction Category System. It was anticipated that, as a result of using the Blumberg system, college supervisors would exhibit significantly greater use of indirect verbal teaching behaviors. There is some evidence to suggest that indirect classroom teaching behavior has a positive correlation with greater pupil achievement. Thus, the anticipated increase in the use of indirect behaviors by college supervisors was viewed as an important aspect of the improvement of the teaching behavior of college supervisors during conferences with their student teachers.

The results of the study indicated that there were no statistically significant differences in selected verbal behaviors between supervisors who used the Blumberg system to analyze their supervisory conferences and supervisors who did not emply this sytem for conference analysis.

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Blumberg Supervisor-Teacher Interaction System

Supervisor Behavior

Category 1. Support-Inducing Communication. Statements by the supervisor intended to build a "healthy" climate.

Category 2. Praise.

Category 3. Accepts or Uses Teacher's Ideas.

Category 4. Asks for Information.

Category 5. Gives Information.

Category 6. Asks for Opinions

Category 7. Asks for Suggestions.

Category 8. Gives Opinions.

Category 9. Gives Suggestions.

Category 10. Criticism.

Teacher Behavior

Category 11. Asks for Information, Opinions, or Suggestions.

Category 12. Gives Information, Opinions, or Suggestions.

Category 13. Positive Social Emotional Behavior.

Category 14. Negative Social Emotional Behavior.

Category 15. Silence or Confusion.

Figure 3

Supervisor-Teacher Interaction Matrix
Blumberg Areas

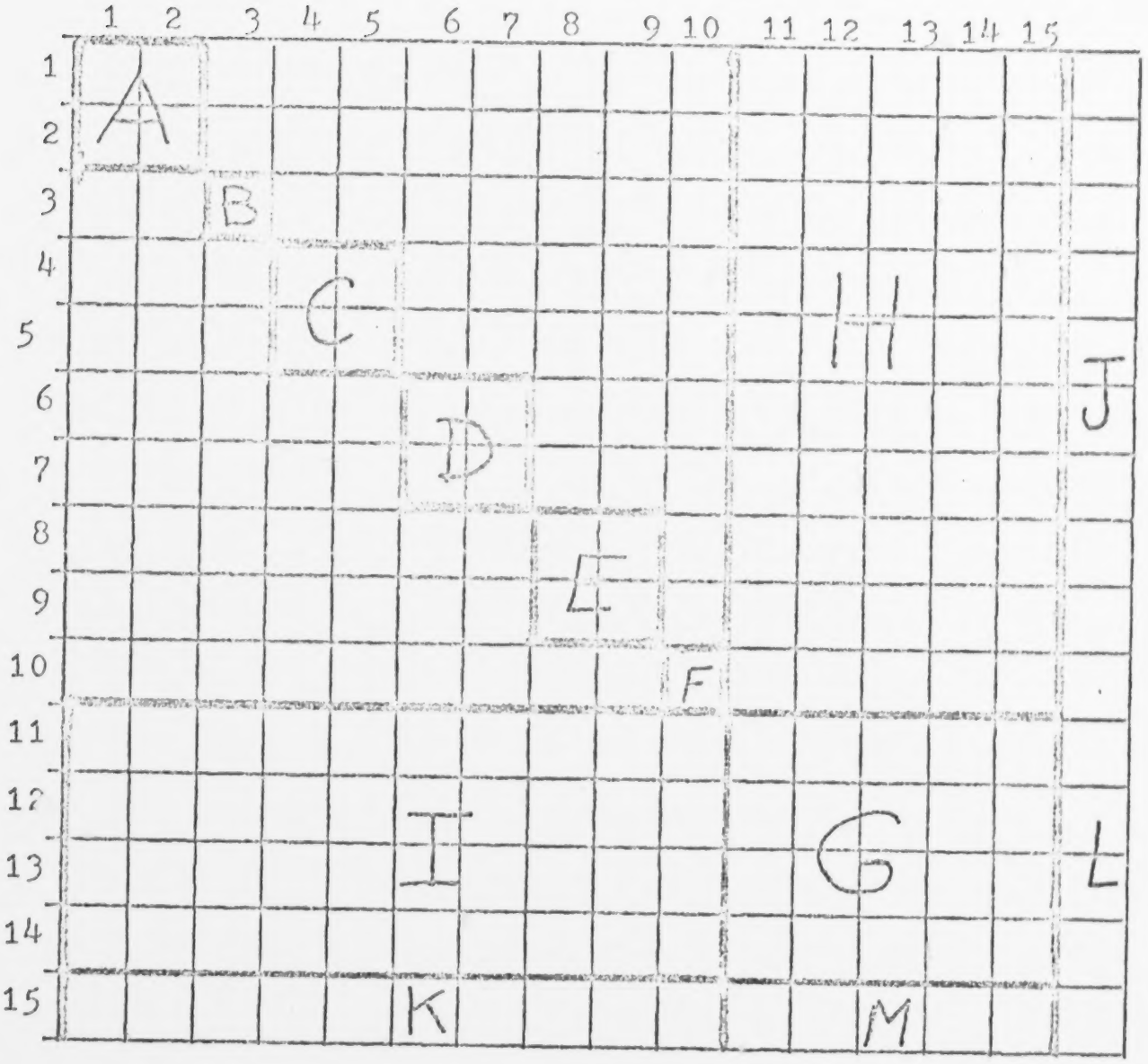

Table 9

Training Group Pretest Conferences -- Composite Matrix

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	0.36	0.06	0.10	0.00	0.40	0.06	0.13	0.23	0.26	0.03	0.03	2.38	0.13	0.00	0.30
2	0.00	1.40	0.26	0.00	0.57	0.06	0.10	0.33	0.20	0.16	0.03	0.57	0.06	0.00	0.16
3	0.00	0.06	0.73	0.03	0.13	0.06	0.03	0.20	0.03	0.03	0.00	0.26	0.00	0.00	0.00
4	0.00	0.00	0.00	0.63	0.03	0.00	0.00	0.00	0.00	0.00	0.06	1.27	0.00	0.00	0.06
5	0.13	0.40	0.00	0.30	7.07	0.30	0.36	0.36	0.70	0.43	0.06	1.54	0.10	0.13	0.20
6	0.00	0.00	0.00	0.00	0.06	1.37	0.06	0.00	0.00	0.00	0.00	1.67	0.00	0.00	0.53
7	0.00	0.00	0.00	0.00	0.10	0.03	1.44	0.00	0.00	0.03	0.00	0.97	0.00	0.03	0.23
8	0.06	0.23	0.06	0.03	0.33	0.23	0.10	5.80	0.60	0.03	0.00	1.91	0.00	0.03	0.30
9	0.16	0.03	0.00	0.00	0.53	0.06	0.00	0.77	6.34	0.10	0.10	1.27	0.03	0.00	0.36
10	0.00	0.06	0.00	0.00	0.33	0.03	0.06	0.16	0.30	1.00	0.03	0.30	0.00	0.06	0.00
11	0.03	0.00	0.00	0.03	0.20	0.00	0.00	0.06	0.06	0.06	0.13	0.10	0.00	0.00	0.00
12	3.58	1.37	0.30	0.93	1.71	1.14	0.50	1.67	0.90	0.33	0.20	26.50	0.10	0.03	0.93
13	0.06	0.00	0.00	0.03	0.16	0.00	0.00	0.00	0.03	0.03	0.00	0.06	0.06	0.00	0.03
14	0.00	0.00	0.03	0.00	0.03	0.03	0.00	0.00	0.03	0.03	0.00	0.13	0.00	0.60	0.00
15	0.10	0.30	0.10	0.06	0.43	0.30	0.03	0.13	0.30	0.06	0.03	1.27	0.00	0.00	1.64
T	4.52	3.95	1.61	2.07	12.14	3.72	2.85	9.76	9.79	2.38	0.70	40.25	0.50	0.90	4.79

All data are reported as frequencies per hundred.

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Table 10

Training Group Posttest Conferences -- Composite Matrix

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	0.41	0.03	0.28	0.06	0.18	0.09	0.06	0.22	0.09	0.03	0.00	4.76	0.18	0.00	0.09
2	0.03	0.37	0.09	0.03	0.60	0.15	0.00	0.47	0.00	0.03	0.00	0.34	0.06	0.00	0.00
3	0.03	0.03	0.85	0.00	0.15	0.09	0.09	0.18	0.06	0.03	0.00	0.53	0.18	0.00	0.03
4	0.00	0.00	0.00	1.07	0.06	0.03	0.00	0.03	0.00	0.00	0.00	1.80	0.00	0.09	0.00
5	0.00	0.44	0.03	0.28	4.51	0.34	0.25	0.37	0.22	0.15	0.09	1.48	0.03	0.06	0.06
6	0.00	0.00	0.00	0.06	0.00	1.35	0.00	0.03	0.00	0.00	0.00	1.95	0.00	0.06	0.34
7	0.00	0.00	0.00	0.00	0.03	0.00	1.32	0.09	0.03	0.03	0.03	0.69	0.00	0.00	0.12
8	0.06	0.28	0.00	0.00	0.41	0.28	0.06	4.83	0.18	0.12	0.06	1.45	0.25	0.12	0.15
9	0.06	0.06	0.00	0.06	0.06	0.00	0.06	0.22	2.14	0.12	0.06	0.72	0.03	0.03	0.12
10	0.00	0.09	0.00	0.00	0.15	0.00	0.00	0.18	0.18	2.40	0.00	0.12	0.00	1.38	0.25
11	0.00	0.03	0.00	0.03	0.22	0.00	0.03	0.00	0.03	0.00	0.09	0.00	0.00	0.00	0.00
12	5.65	0.82	0.97	1.32	1.48	1.16	0.47	1.20	0.63	0.50	0.03	31.86	0.09	0.12	0.47
13	0.09	0.00	0.03	0.03	0.03	0.03	0.00	0.12	0.03	0.03	0.00	0.34	0.06	0.00	0.09
14	0.00	0.03	0.03	0.06	0.12	0.03	0.00	0.15	0.06	1.20	0.00	0.31	0.00	1.38	0.15
15	0.18	0.00	0.00	0.06	0.31	0.22	0.00	0.15	0.09	0.12	0.06	0.41	0.00	0.28	0.69
T	6.53	2.21	2.30	3.09	8.37	3.82	2.36	8.30	3.79	4.80	0.44	46.84	0.91	3.56	2.62

All data are reported as frequencies per hundred.

Table 11

Control Group Pretest Conferences -- Composite Matrix

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	0.76	0.33	0.03	0.15	0.58	0.12	0.03	0.58	0.33	0.03	0.06	3.46	0.30	0.00	0.15
2	0.21	3.03	0.00	0.06	1.71	0.09	0.03	1.10	0.21	0.00	0.00	0.95	0.21	0.00	0.12
3	0.00	0.06	0.30	0.00	0.03	0.06	0.00	0.03	0.03	0.00	0.00	0.27	0.00	0.00	0.00
4	0.00	0.00	0.00	0.92	0.00	0.03	0.00	0.00	0.00	0.00	0.00	2.05	0.00	0.03	0.03
5	0.09	1.99	0.00	0.42	5.98	0.24	0.09	0.49	0.42	0.27	0.09	1.74	0.15	0.00	0.12
6	0.00	0.00	0.00	0.03	0.03	1.31	0.00	0.03	0.03	0.03	0.03	2.08	0.00	0.00	0.24
7	0.00	0.00	0.00	0.00	0.00	0.00	0.36	0.09	0.00	0.00	0.00	0.33	0.00	0.00	0.09
8	0.06	0.67	0.00	0.15	0.49	0.15	0.06	8.13	0.82	0.21	0.06	2.39	0.15	0.03	0.42
9	0.09	0.03	0.00	0.00	0.42	0.09	0.00	0.67	5.98	0.03	0.00	1.16	0.33	0.00	0.30
10	0.00	0.00	0.00	0.00	0.15	0.15	0.03	0.03	0.21	0.33	0.00	0.49	0.00	0.00	0.06
11	0.12	0.03	0.00	0.00	0.06	0.03	0.00	0.03	0.00	0.00	0.09	0.03	0.00	0.00	0.00
12	5.24	1.31	0.39	1.25	1.99	1.31	0.24	2.08	0.67	0.55	0.06	19.33	0.12	0.00	0.85
13	0.18	0.18	0.00	0.00	0.21	0.03	0.00	0.18	0.27	0.00	0.00	0.21	0.06	0.00	0.00
14	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.06	0.00
15	0.18	0.09	0.03	0.06	0.46	0.18	0.03	0.33	0.12	0.00	0.00	0.91	0.00	0.00	0.27
T	6.96	7.76	0.79	3.06	12.15	3.83	0.89	13.84	9.14	1.47	0.39	35.48	1.35	0.12	2.70

All data are reported in frequencies per hundred.

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Table 12

Control Group Posttest Conferences -- Composite Matrix

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	0.32	0.10	0.03	0.17	0.28	0.03	0.14	0.64	0.14	0.00	0.03	3.30	0.10	0.00	0.21
2	0.00	1.11	0.03	0.00	0.78	0.07	0.00	0.64	0.00	0.03	0.03	0.50	0.14	0.00	0.03
3	0.00	0.07	0.14	0.03	0.14	0.00	0.03	0.14	0.00	0.00	0.00	0.17	0.03	0.00	0.03
4	0.03	0.00	0.00	0.78	0.00	0.03	0.00	0.07	0.03	0.00	0.00	2.04	0.00	0.00	0.07
5	0.03	0.89	0.00	0.43	5.77	0.35	0.03	0.89	0.25	0.21	0.14	1.47	0.03	0.03	0.14
6	0.00	0.00	0.00	0.00	0.03	1.90	0.00	0.00	0.00	0.00	0.03	1.72	0.07	0.03	0.10
7	0.00	0.00	0.00	0.00	0.00	0.00	0.46	0.07	0.03	0.00	0.00	0.39	0.00	0.00	0.03
8	0.10	0.71	0.00	0.17	0.86	0.07	0.00	10.01	0.86	0.21	0.03	2.36	0.50	0.07	0.35
9	0.00	0.00	0.00	0.03	0.25	0.00	0.00	0.71	4.80	0.07	0.03	1.04	0.10	0.00	0.07
10	0.00	0.00	0.00	0.00	0.10	0.03	0.03	0.14	0.07	0.43	0.03	0.21	0.00	0.03	0.00
11	0.07	0.03	0.00	0.00	0.21	0.00	0.00	0.07	0.00	0.00	0.10	0.00	0.00	0.00	0.00
12	4.70	0.39	0.53	1.32	1.82	1.14	0.25	2.33	0.75	0.07	0.03	28.63	0.00	0.00	0.53
13	0.17	0.03	0.03	0.00	0.07	0.03	0.00	0.39	0.07	0.00	0.00	0.17	0.07	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.03	0.03	0.00	0.00	0.07	0.00	0.03	0.00
15	0.10	0.03	0.03	0.10	0.35	0.17	0.03	0.17	0.07	0.07	0.00	0.43	0.00	0.00	0.89
T	5.56	3.40	0.82	3.08	10.72	3.91	1.00	16.36	7.14	1.11	0.50	42.55	1.07	0.21	2.51

All data are reported in frequencies per hundred.

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